IN THE CLAIMS:

1. (Original) A method for the formation of rectifying junctions on alloy-semiconductors comprising the steps of:

photo-electrochemical removal of one component of the alloy material and

chemical etching of another component of the alloy to produce a positive-intermediate-negative (PIN) structure semiconductor.

2. (Original) The method according to Claim 1, wherein the alloy semiconductor comprises a combination of Group II element and a Group VI element.

3. (Original) The method according to Claim 2, wherein the alloy semiconductor comprises CdTe.

4. (Original) The method according to Claim 2, wherein the alloy semiconductor comprises CdZnTe.

5. (Original) The method according to Claim 2, wherein the alloy semiconductor comprises HgZnCdTe.

6. (Original) The method according to Claim 2, wherein the alloy semiconductor comprises HgCdZnSe.

7. – 24. (Withdrawn)

25. (Currently amended) A method for forming an N-type contact on an alloy-semiconductor material comprising a compound having at least a first component, the method comprising:

photo-electrochemical removal of the first component to form the N-type contact;

wherein photo-electrochemical removal of the first component comprises

depositing a removable N-type conductive material on the alloy-semiconductor material;

connecting the deposited material to a negative terminal of a power supply;

connecting an electrode disposed in an electrolyte solution to a positive terminal of the power supply; and

exposing the electrolyte solution to a light source.

26. (Previously presented) The method according to claim 25, wherein the first component comprises a Group VI element.

27. (Previously presented) The method according to claim 26, wherein the compound is selected from the group consisting of CdTe, CdZnTe, and HgZnCdTe.

28. (Cancelled)

29. (Cancelled)

30. (Currently amended) The method according to claim ~~28~~ 25, wherein the light source comprises a near infrared wavelength light and has a median energy equal to the band gap of the alloy-semiconductor material.

31. (Currently amended) The method according to claim ~~28~~ 25, wherein the electrolyte solution comprises a pH of at least about 10.5.

32. (Previously presented) The method according to claim 25, further comprising forming a P-type contact on the alloy-semiconductor material.

33. (Previously presented) The method according to claim 32, wherein the step of forming a P-type contact comprises metal deposition.

34. (Previously presented) The method according to claim 33, further comprises depositing a P-type metal on the P-type contact.

35. (Previously presented) The method according to claim 34, wherein the step of depositing the P-type metal comprises depositing the P-type metal by vacuum deposition or electrodeless chemical exchange.

36. (Previously presented) The method according to claim 32, wherein the alloy-semiconductor material further comprises a second component, the second component a

complimentary component of the first component, the method further comprising removing the second component to form the P-type contact.

37. (Previously presented) The method according to claim 36, wherein the step of removing the second component comprises chemical etching.

38. (Previously presented) The method according to claim 37, further comprising exposing an area of the alloy-semiconductor material comprising the P-type contact to a retarding electrochemical potential to etch the second component at a faster rate than the first component.

39. (Previously presented) The method according to claim 37, wherein the step of removing the second component by chemical etching comprises exposing the alloy-semiconductor material to an oxidizing agent comprising nitric acid and phosphoric acid.

40. (Previously presented) The method according to claim 39, wherein the nitric acid is present in an amount from about 0.1% to about 0.5% by volume.

41. (Previously presented) The method according to claim 39, wherein the oxidizing agent comprises a solution of HNO_3, distilled H_2O, and H_3PO_4, in a ratio of 2:33:85 by volume.

42. – 44. (Cancelled)